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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,340	12/31/2001	George G. Barclay	50727-3C	1545
21874	7590	09/10/2004		
EDWARDS & ANGELL, LLP				
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			EXAMINER	
			HAMILTON, CYNTHIA	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/039,340

Applicant(s)

BARCLAY ET AL.

Examiner

Cynthia Hamilton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/24/04, 5/19/04, 1/7/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8, 23, 24, 35 and 46-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 23, 24, 35 and 46-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 7, 2004, and May 19, 2004 and June 24, 2004 has been entered in so far as amendments were compliant with 37 CFR 1.121.

2. If applicant desires priority under 35 U.S.C. 120 based upon a previously filed application, i.e. continuation-in-art of U.S. application No. 09/567,634, specific reference to the earlier filed application must be made in the instant application. Applicants have done this by amendment. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. \_\_\_\_\_" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant

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application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A priority claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed claim for priority under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Applicants have not submitted the required petition to change the status of U.S. application No. 09/567,634 from continuation to continuation-in-part as required at this late date.

3. The examiner notes that applicants in their remarks of July 24, 2004 state, "New claim 69 corresponds to allowed claim 3 written independent form." The claim 3 referenced is shown below:

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3. The photoresist of claim 1 wherein the heteroalicyclic group has a sulfur ring member.

The submitted claim 69 is as follows:

Claim 69. (new) A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group that is not an anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring atoms; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

As can clearly be seen claim 69 does not contain the limit of claim 3 requiring the presence of a sulfur ring member. Thus, claim 69 does not represent the "allowed claim 3". Claim 69 appears to be a copy of claim 1 rejected finally in the Office Action of September 25, 2003. A copy of that claim is as follows:

1. (amended) A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group that is not an anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring members; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

Applicants did not address arguments to the prior art rejections based on this claim language in their responses of January 7, 2004, and May 19, 2004 and June 24, 2004.

4. EXAMINER NOTE:

There is no disclosure in the original application SN 09/567,634 and claims to polymer comprised of a heteroalicyclic group that is not an anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring members as is now found in instant claim 69 and was part of the original disclosure, i.e. original claim 13, in the instant

application as well as in PCT/US01/14914. Thus, the effective filing date for claim 69 and all dependent there on is that of PCT/US01/14914 which is May 8, 2001.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 69 is rejected under 35 U.S.C. 102(b) as being anticipated by Jung et al (GB 2320718A). Jung et al in Examples III and V present compositions that anticipate the instant composition where in Jung et al the fused heteroalicyclic group is the carbonate of Formula IV in claim 1 of Jung et al. The t-butyl group is the photoacid labile moiety. There are no aromatic rings present. The process of imaging with these compositions is set forth in Example VIII and page 6 of Jung et al that anticipates the method of instant claim 35 and the coated wafer of instant claim 41. The first set of claims 5-6, 54 and 61 of Jung et al disclose processes and compositions and coated articles. Thus with respect to instant claim 69, Jung et al anticipates the instant invention. In Jung et al, see particularly page 6, Examples III, V and page 13.

Claim 69 is rejected under 35 U.S.C. 102(e) as being anticipated by Jung et al (6,150,069). The compositions, articles of manufacture and methods of forming relief images of Jung et al anticipate the instant compositions, articles and methods of claim 69 wherein oxygen is the heteroatom in the fused ring. In Jung et al, see col. 2, lines 6-61, col. 3, lines 1- col. 6, lines 37, and Examples.



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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 69 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishi et al (6,566,038 B2). With respect to instant claim 69, Nishi et al disclose a species which reads on the instant invention with the exception of giving an example wherein the third optional monomer unit of the polymer used as set forth in col. 10-13 has  $X = O$ . However, such are clearly disclosed by Nishi et al. as options for X of which there are only two, i.e.  $-CH_2-$  or  $-O-$ . Thus, the choice of  $X = O$  is immediately envisionable and thus anticipatory of the instant invention or are immediately obvious as one of two choices in the instant polymers for the optional units which always require X present. In Nishi et al, see particularly the Summary of the Invention, col. 18, lines 30-68 and claim 2.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 65 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 65 is as follows:

Claim 65. (new) The photoresist composition of claim 1 wherein the heterocyclic group that is not an anhydride or lactone.

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This wording does not make sense because there is no limit set by this language. There is no clear antecedent basis for a heteroalicyclic group that is not an anhydride or lactone in claim 1 and there is no limit for the group in the claim language. Perhaps applicants intended to claim "wherein the heteroalicyclic group is not an anhydride or lactone?" For this reason, the meaning of the limits set by claim 65 is unclear.

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 1-5, 8, 23-24, 35, 41 and 46-68 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In independent claims 1 and 52 is found "not an oxynorbornyl". These claims are as follows:

**Claim 1. (currently amended)** A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group that ~~does not contain a carbonyl ring member and is not an oxynorbornyl anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring atoms;~~ ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

**Claim 52. (currently amended)** A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group fused to the polymer backbone and that contains one or more oxygen ring members but does not contain an unsaturated oxygen and ~~is not an oxynorbornyl;~~ ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.



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All of claims 1-5, 8, 23-24, 35, 41 and 46-68 have this limit with respect to the polymer that comprises a heteroalicyclic group that is fused to the polymer backbone. Applicants cite for support of "not an oxynorbornyl" page 6, lines 11-15 and page 11, lines 19-25 of the application.

These portions of the original disclosure are as follows:

Page 6

10  
The oxygen and/or sulfur atoms of the heteroalicyclic ring are preferably direct ring members (bi-radical linkages), rather than e.g. a multiple bond group such as a keto or thioketo ring member. Also, less preferred are groups that contain any such saturated groups such as a ketone or other carbonyl including ester, lactone, anhydride, etc.  
15

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20 Polymers of the invention also may contain oxygen or sulfur ring groups that are spaced from the polymer backbone. The spaced oxygen or sulfur ring group suitably will contain a single ring, although polycyclic rings that contain one or more oxygen or sulfur ring members also will be suitable. Less preferred are groups where sulfur or oxygen is a bridgehead atom of a polycyclic group, particularly a bridgehead of a bicyclic group such as a oxonorbornyl or thionorbornyl group, especially if such oxonorbornyl or  
25 thionorbornyl group is present as part of an ester moiety.

Only page 11 comes close to supporting this addition to the claims. However, the limitation on page 11 appears to be directed to polymers that have oxygen or sulfur ring groups "spaced" from the polymer backbone, i.e. not fused to the backbone as required by instant claims 1-5, 8, 23-24, 35, 41 and 46-68. Further, there is no disclosure to "oxynorbornyl" groups found. What is

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found is "oxonorbornyl". Thus, applicants have failed to show sufficient support in the original disclosure for the addition of "not an oxynorbornyl" to the instant claims.

13. Claims 1-2, 4-5, 23-24, 35 and 41 and 46, 48-54, 56-68 are rejected under 35 U.S.C. 102(e) as being anticipated by Jung et al (6,150,069). The compositions, articles of manufacture and methods of forming relief images of Jung et al anticipate the instant compositions, articles and methods of claims 1-2, 4-5, 23-24, 35 and 41 and 46, 48-54, 56-68 wherein oxygen is the heteroatom in the fused ring. In Jung et al, see col. 2, lines 6-61, col. 3, lines 1- col. 6, lines 37, and Examples.

14. Applicant's arguments filed June 24, 2004 have been fully considered but they are not persuasive. Applicants argue that Jung US patent 6150,069 is cited for certain oxynorbornyl groups. Jung has "oxonorbornyl" groups as defined by applicants not oxynorbornyl groups. The rejection stands.

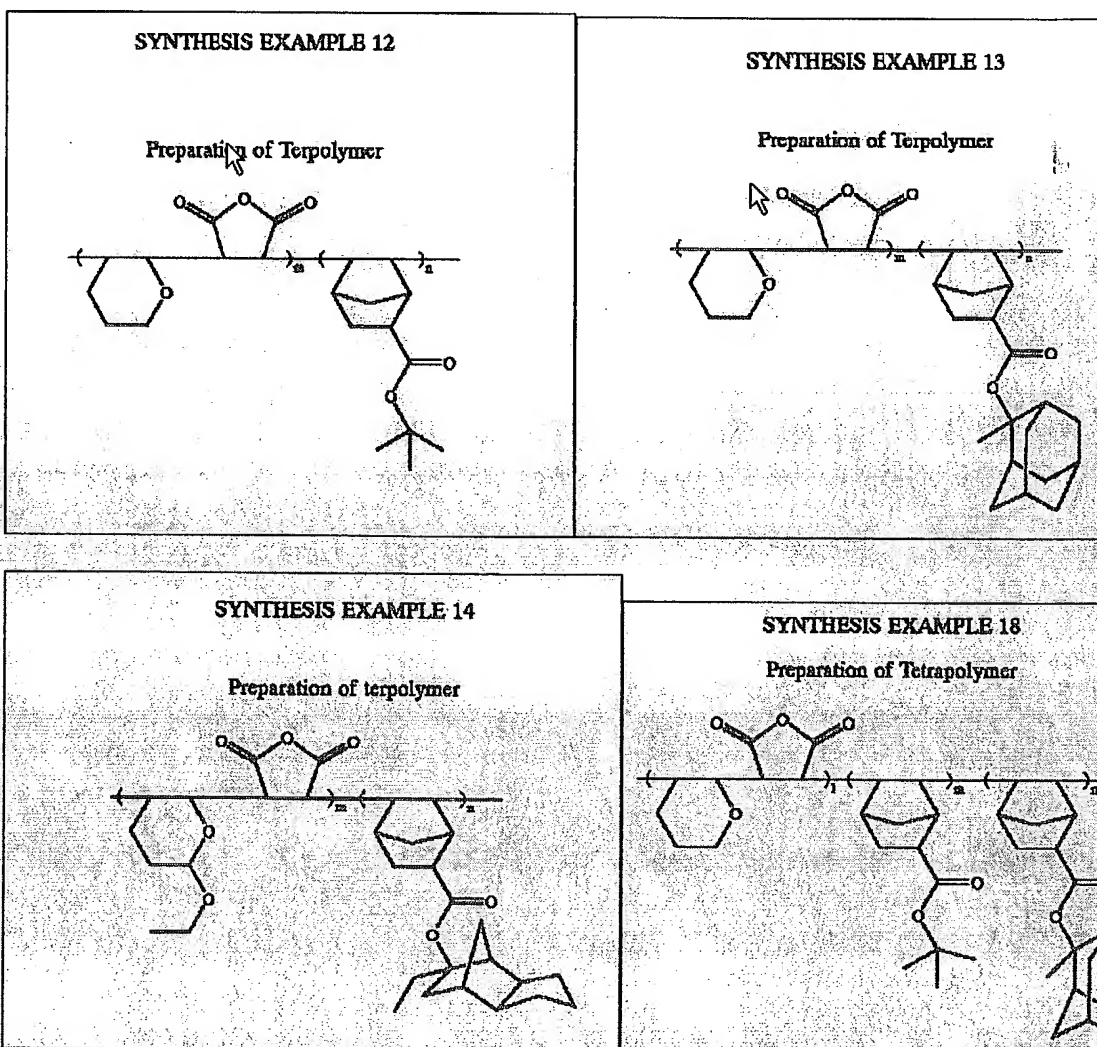
1. Claims 1-2, 4-5, 24, 35, 41, 46, 48-50, 52-54, and 56-68 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishi et al (6,566,038 B2). With respect to instant claims 1-2, 4-5, 24, 35, 41, 46, 48-50, 52-54, and 56-68, Nishi et al disclose a species which reads on the instant invention with the exception of giving an example wherein the third optional monomer unit of the polymer used as set forth in col. 10-13 has  $X = O$ . However, such are clearly disclosed by Nishi et al as options for X of which there are only two, i.e.  $-CH_2-$  or  $-O-$ . Thus, the choice of  $X = O$  is immediately envisionable and thus anticipatory of the instant invention or are immediately obvious as one of two choices in the instant polymers for the optional units which always require X present. In Nishi et al, see particularly the Summary of the Invention, col. 18, lines 30-68 and claim 2.

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15. Applicants have presented no arguments with respect to why Nishi et al is not properly applied. The examiner notes that Nishi et al has some oxonorbornyl groups but no oxynorbornyl groups.

16. Claims 1-2, 4-5, 23-24, 35, 41, 46, 48-69 rejected under 35 U.S.C. 102(e) as being anticipated by Choi et al (6,517,990 as evidenced by their provisional document 60/198,761).

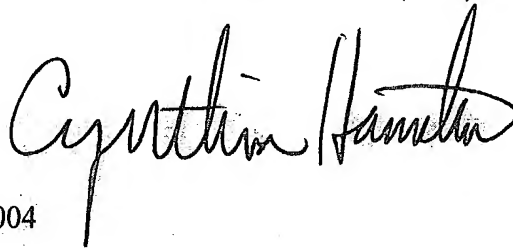
With respect to instant claims 1-2, 4-5, 23-24, 35, 41, 46, 48-69, the examples of Choi et al at Example 4 with respect to Synthesis Examples 12, 13, 14 and 18 also present in 60/198,761 anticipate the instant polymers. The polymers in question from 6,517,990 are as follows:



*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-1331. The examiner can normally be reached on Monday through Friday 9:30 am to 5:00 pm.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H Kelly can be reached on (571) 272-0729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.*

*Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*



Cynthia Hamilton  
Primary Examiner  
Art Unit 1752

September 8, 2004